Lutron Electronics and Mitsubishi Electric Cooling & Heating (Mitsubishi Electric), a leading supplier of Variable Refrigerant Flow (VRF) technology, have integrated a sleek, intuitive design of the Palladiom thermostat for control of Mitsubishi Electric systems.

This integration is achieved by using a combination of a Mitsubishi Electric thermostat interface along with Lutron hardware as follows:

- Mitsubishi PAC-US444CN-1 with a Lutron Fan Coil Unit or the HomeWorks QS Palladiom HVAC controller and a Palladiom thermostat
  OR
- Mitsubishi A1M with a HomeWorks QS Palladiom thermostat

This integration is available for Lutron projects in the United States only.

2.0 Mitsubishi PAC-US444CN-1

2.1 System Topology

![Diagram of PAC-US444CN-1 system topology]

- Thermostat / Controller
- Communication Link
- To CN105 Connector on Indoor Unit
- Contact Closures
- PAC-US444CN-1
- QS Link to Lutron System
2.2 Wiring Diagrams (myRoom FCU Controller with PAC Interface)

Heat and Cool

Heat Only
2.2 Wiring Diagrams (myRoom FCU Controller with PAC Interface) (continued)

Cool Only

- When using the FCU controller in heat or cool only configuration, the FCU controller must be configured for heat only or cool only. By default the controller is set to use both heat and cool.
- The PAC-US444CN-1 interface should be supplied by a Mitsubishi distributor.
- Use one PAC-US444CN-1 interface per indoor unit controlled by the Palladiom thermostat.
- 24 V~ power supply is required and field supplied by others.
- Use 18 AWG (1.0 mm²) wire between PAC-US444CN-1 and Lutron FCU controller.
- The Lutron myRoom system and Palladiom thermostat must be programmed by a trained Lutron service engineer or an authorized distributor.
2.3 Wiring Diagrams (HomeWorks QS Palladiom HVAC Controller with PAC Interface)

Heat and Cool

Heat Only
2.3 Wiring Diagrams (HomeWorks QS Palladiom HVAC Controller with PAC Interface)  

When using the HomeWorks QS Palladiom HVAC controller in heat or cool only configuration, the HomeWorks QS Palladiom HVAC controller must be configured for heat only or cool only. The HomeWorks QS Palladiom HVAC controller must also be configured to control FCUs.

- The PAC-US444CN-1 interface should be supplied by a Mitsubishi distributor.
- The HomeWorks QS Palladiom HVAC controller must be model number SMC55-RESI from Lutron.
- Use one PAC-US444CN-1 interface per indoor unit controlled by the Palladiom thermostat.
- 24 V supply is required and field supplied by others.
- Use 18 AWG (1.0 mm²) wire between PAC-US444CN-1 and Lutron HomeWorks QS Palladiom HVAC controller.
- The Lutron HomeWorks QS system and HomeWorks QS Palladiom thermostat must be programmed by a qualified system programmer.

2.4 DIP Switch Configuration for PAC-US444CN-1

<table>
<thead>
<tr>
<th>SW2-1</th>
<th>OFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW2-2</td>
<td>OFF</td>
</tr>
<tr>
<td>SW2-3</td>
<td>OFF</td>
</tr>
<tr>
<td>SW2-4</td>
<td>OFF</td>
</tr>
<tr>
<td>SW2-5</td>
<td>ON</td>
</tr>
<tr>
<td>SW2-6</td>
<td>ON</td>
</tr>
<tr>
<td>SW1-1</td>
<td>ON</td>
</tr>
<tr>
<td>SW1-2</td>
<td>ON</td>
</tr>
<tr>
<td>SW1-3</td>
<td>OFF</td>
</tr>
<tr>
<td>SW1-4</td>
<td>OFF</td>
</tr>
</tbody>
</table>

Note: A Mitsubishi Electric trained HVAC professional may change the DIP switch configurations based on user preference.
3.0 Mitsubishi A1M

3.1 System Typology

3.2 Adding a Mitsubishi A1M to a HomeWorks QS Database (version 12.0 or newer)

To add Mitsubishi equipment to the database, go to the design tab of the software and use the drop-down menu to select equipment. Next, find the 3rd Party HVAC device in the toolbox and click on “+” to add the device using HomeWorks 12.0 or newer.

NOTE: The default toolbox does not contain this device by default, so it is necessary to edit or create a toolbox to include the 3rd Party HVAC device.

Once the 3rd Party HVAC device has been added to the Equipment area, provide a name for the HVAC device and select Mitsubishi as the Manufacturer.

When adding the 3rd Party HVAC device, a zone is automatically added by default to the area where the Mitsubishi interface is located. To move that HVAC zone to the area the Mitsubishi A1M is located, cut/paste the HVAC zone to the desired area.
3.3 Editing the HVAC Zone

To edit a 3rd Party HVAC Zone in the database, go to the design tab of the HomeWorks QS software and use the drop-down menu to select loads. Next, find the HVAC Zones tab on the right-hand side of the screen.

For each HVAC zone added, provide a Zone Name, select Operating Modes, and select the Fan Speeds that are applicable. Unchecked modes will be hidden when using the Lutron Connect app. It is important to check only the modes that are necessary so that the app is simpler for the end user. Choosing a user-friendly zone name is important for the same reason.

UID reflects the indoor unit address. All indoor units must be provided with addresses depending on specific AC system type. This can be done automatically by system or must be done manually by integrator. Addresses should be set by a HVAC contractor and the integrator should acquire the addresses from the contractor.

3.4 Assigning a Palladiom Thermostat to Control the HVAC Zone

The final step is to assign a Palladiom Thermostat to the zone.

The Palladiom thermostat is a QS wired link device which can act as a remote thermostat control for a Mitsubishi device. The Palladiom thermostat takes one address of the 99 available on a QS link and there can be up to 32 Palladiom thermostats per QS link. When using a Palladiom thermostat with Mitsubishi equipment, the sensor within the Palladiom thermostat is not used by the system.
3.4 Assigning a Palladiom Thermostat to Control the HVAC Zone (continued)

The Palladiom thermostat can be added to the project by navigating to Design > Controls and selecting the desired item from the Toolbox. If the items do not show in the Temperature tab, they can be added by clicking Edit Toolbox.

Select the correct device location from the Area Tree, hover over the control, and then click “+” to add the control to the area.

Click on Assign... under the HVAC Controller field.

Navigate to Design > Equipment and select the Mitsubishi controller to assign to the Palladiom thermostat.

Click on Assign... under the Assigned Devices field.

Click on Assign... to link the controller to the Palladiom thermostat

The name of the remote temperature control will now be visible in the Assigned Devices field.